

FORM PTO-1390
(REV. 11-2000)

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

763-30

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

10/069848

INTERNATIONAL APPLICATION NO.
PCT/JP01/05104INTERNATIONAL FILING DATE
15 June 2001PRIORITY DATE CLAIMED
29 June 2000

TITLE OF INVENTION INDICATOR FOR PLASMA STERILIZATION

APPLICANT(S) FOR DO/EO/US MASAO MIKUMO, KENJI KAZAMA AND YOSHIO JO

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☐ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☒ is attached hereto. (SEE ITEM 20 INFRA)
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☒ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☒ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 20 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information: 30 PAGES SPECIFICATION IN ENGLISH, 1 PAGE OF CLAIMS 1-6 IN ENGLISH, 1 PAGE ABSTRACT IN ENGLISH AND 16 SHEETS OF FIGS. 1-31, PCT/ISA/220 & 210

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV035533359US addressed to Assistant Commissioner for Patents, Box PCT, Washington, D.C. 20231.Dated: FEB 28 2002

GEORGE M. KAPLAN

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CALCULATIONS PTO USE ONLY

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Mikumo et al.

Examiner:

Serial No.: Not yet assigned

Group Art No.

Filed: Herewith

Docket: 763-30

For: INDICATOR FOR PLASMA
STERILIZATION

Dated: February 28, 2002

Assistant Commissioner for Patents
Washington, D.C. 20231

AMENDMENT

Sir:

Please enter the following Preliminary Amendment in the above-identified application:

IN THE SPECIFICATION:

Page 3, line 27, change "DISCLOSURE" to - -SUMMARY- -; and

Page 9, line 22, change "MODES FOR CARRYING OUT THE
INVENTION" to - -DESCRIPTION OF THE PREFERRED EMBODIMENTS- -;

IN THE ABSTRACT:

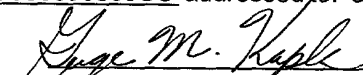
Please formally insert the abstract found upon accompanying page 32.

IN THE CLAIMS:

Cancel Claims 1-5 without prejudice and substitute therefor Claims 6-15:

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date February 28, 2002 in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV035533359US addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231.


George M. Kaplan

6. An indicator for plasma sterilization comprising at least one type of a colorless chromogenic fluoran pigment, a coloring assistant, and a binder (a binding agent), wherein the color tone change of the indicator is allowed to occur by a hydrogen peroxide low temperature plasma sterilization method.

7. An indicator for plasma sterilization according to claim 6, wherein the coloring assistant is at least one type of a compound having a dithiocarbamyl group.

8. An indicator for plasma sterilization according to claim 6, wherein the coloring assistant is at least one type of a compound having a mercapto group.

9. An indicator for plasma sterilization according to claim 6, wherein a compound which has a low coloration promoting property in a hydrogen peroxide vapor is used as a compound having a dithiocarbamyl group which is the coloring assistant.

10. An indicator for plasma sterilization according to claim 6, wherein a polyphenol compound is used as a discoloration preventing agent for a pigment colored by a hydrogen peroxide plasma sterilization method.

11. An indicator for plasma sterilization according to claim 7, wherein a compound which has a low coloration promoting property in a hydrogen peroxide vapor is used as a compound having a dithiocarbamyl group which is the coloring assistant.

12. An indicator for plasma sterilization according to claim 7, wherein a polyphenol compound is used as a discoloration preventing agent for a pigment colored by a hydrogen peroxide plasma sterilization method.

13. An indicator for plasma sterilization according to claim 8, wherein a polyphenol compound is used as a discoloration preventing agent for a pigment colored by a hydrogen peroxide plasma sterilization method.

14. An indicator for plasma sterilization according to claim 9, wherein a polyphenol compound is used as a discoloration preventing agent for a pigment colored by a hydrogen peroxide plasma sterilization method.

15. An indicator for plasma sterilization according to claim 11, wherein a polyphenol compound is used as a discoloration preventing agent for a pigment colored by a hydrogen peroxide plasma sterilization method.

REMARKS:

The claims in the application are 6-15.

Favorable consideration of the application as amended is respectfully requested.

The claims have been amended on the basis of the Article 19 amendments in the priority PCT application to eliminate all multiple dependencies. The specification has also been amended to correct all subtitles with the abstract formally inserted.

Referring to the International Search Report, (copy enclosed) in the above-identified PCT application, in Claim 6, it is made clear that a colorless fluoran pigment is used as a pigment the color of which may change wherein the pigment is colored through the change into the colored type of pigment structure due to ring-opening of the lactone ring in the pigment molecule by the cooperative action of a coloring assistant and hydrogen peroxide during sterilization.

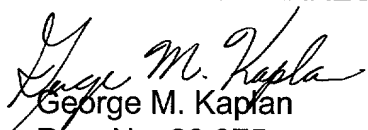
In cited reference 1, a phenylmethane basic pigment or a cyanine basic pigment which is a colored pigment is used as a pigment the color of which may change wherein in principle the pigment loses color through oxidative degradation and disappearance by the cooperative action of a coloring assistant and hydrogen peroxide during sterilization. Therefore, cited reference 1 is different from the invention of the present application with respect to the principle, in itself, of a change in color.

In both cited reference 2 and cited reference 3, a fluoran compound is used as an electron-donating chromogenic compound. As for the detection compound for detecting a gaseous substance of cited reference 2, a fluoran electron-donating type coloring compound which is contained in colored state from the first stage in combination with a nonvolatile developer, loses color due to the presence of a specific gaseous substance.

On the other hand, as for the detection resin composition and the compact thereof of reference 3, coloration of the fluoran electron-donating chromogenic compound occurs on contact with the vapor of an electron-accepting substance (an acidic substance) to be detected, and the pigment colored by the vapor returns to a colorless state due to evaporation of the vapor from the pigment.

Early favorable action is earnestly solicited.

Respectfully submitted,
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